

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Application of:

Applicant: : Robert Spector  
Serial No. : 10/613,987  
Filing Date : July 4, 2003  
Title of Invention : METHOD OF AND APPARATUS FOR DIAGNOSING  
AND TREATING AMBLYOPIC CONDITIONS IN THE  
HUMAN VISUAL SYSTEM  
Examiner : John R. Sanders, Jr.  
Group Art Unit : 3737  
Attorney Docket No. : 143-001USA000

Honorable Commissioner of Patents  
and Trademarks  
Washington, DC 20231

**INFORMATION DISCLOSURE STATEMENT**

**UNDER 37 C.F.R. 1.97**

Sir:

In order to fulfill Applicant's continuing obligation of candor and good faith as set forth in 37 C.F.R. 1.56, Applicant submits herewith an Information Disclosure Statement prepared in accordance with 37 C.F.R Sections 1.97, 1.98 and 1.99.

The disclosures are as follows:

**U.S. PUBLICATIONS**

<u>NUMBER</u>	<u>FILING DATE</u>	<u>TITLE</u>
6,540,990 B2	August 13, 2001	PHYSIOLOGICAL METHOD OF IMPROVING VISION
6,273,092 B1	September 22, 2000	METHODS FOR TREATING VARIOUS EYE DISORDERS
6,149,615	November 23, 1998	OPTO-CUPPED PEDIA PATCH
5,956,126	November 18, 1987	OPTICAL INSTUMENT AND METHOD FOR THE TREATMENT OF AMBLYOPIA
4,896,959	November 6, 1987	VISUAL ACUITY UNIT FOR TREATMENT OF AMBLYOPIA

4,726,672	April 8, 1987	ACUITY THERAPY UNIT
4,134,401	May 24, 1977	EYE-PATCHING METHOD AND DEVICE
4,057,054	May 20, 1976	EYE TREATMENT APPARATUS
2003/0208265 A1	May 6, 2001	SUPPLEMENTARY ENDO-CAPSULAR LENS AND METHOD OF IMPLANTATION
2003/0214630 A1	May 16, 2002	INTERACTIVE OCCLUSION SYSTEM

### **TECHNICAL PUBLICATIONS**

MARR, D., Vision: A Computation Investigation into the Human Representation and Processing of Visual Information, 1982, Chapter 3 entitled "Stereopsis", pages viii, ix, 111-161, W.H. Freeman and Company, New York.

### **SEARCH REPORTS**

APPLICATION NO: REPORT DATE:  
PCT/US04/21590 March 17, 2005

### **STATEMENTS OF PERTINENCE**

U.S. Patent No. 6,540,990 B2 to Nolan discloses a physiological method for improving vision in a human patient. This method involves topical application to the eye, an amount of acetylcholine esterase inhibitor containing composition so that it is sufficient to provide a therapeutic benefit to improve the visual acuity in the human patient. The composition is administered topically and at bedtime after an eye straining work for about 20 minutes. The method disclosed herein is used for treatment and prevention of congenital and acquired color vision blindness, treatment of ocular hypertension and glaucoma, prevention of the progression of myopia, treatment of strabismus or squint, potentiation of best visual acuity, neuro-protection, treatment of aberrations secondary to pupil dilation.

U.S. Patent No. 6,273,092 B1 to Nolan discloses methods for restoring reading vision and increasing the amplitude of accommodation in presbyopic patients. The method involves topically administering to the patient an amount of a composition sufficient to inhibit acetylcholine esterase activity in the eye of the patient. The invention discloses dose ranges of acetylcholine esterase inhibitor in the composition used for restoring reading vision and increasing the amplitude of accommodation in presbyopic patients and successful correction of presbyopia in these patients. The methods disclosed herein are also used to treat other disorders such as dry eye syndrome, hyperopia, myopia, amblyopia, glaucoma and cataracts.

U.S. Patent No. 6,149,615 to Gallamore discloses an improved occlusive self-adhesive eye patch, and a method of treatment of amblyopia. A patch may successfully be applied over the left or right eye without restriction of eye movement or function. The patch comprises a non-adherent gauze pad or foam, having an adhesive for securing patch to the face over the eye socket. A slit from the patch's central bottom edge inward toward the center is present to allow for manual manipulation of the adhesive side transversely atop from the slit and adhering it to the non-adhesive side; therefore, the patch may be configured into a concavo-convex or outwardly cupped shape.

U.S. Patent No. 5,956,126 to Cody discloses a method and apparatus for treating muscular disorders of the eye. The method comprising placing an object in front of the patient at a predetermined distance and placing a binocular optical system comprising lenses and prisms between the objects and the patient's eyes. A patch is placed over the strong eye and the focal length of the optical system is adjusted so that the objects are clearly resolved by the patient. The patch is removed from the good eye so that the patient can repeat the exercise using both eyes. The object is then placed at a greater distance from the patient and the exercise is repeated until the resolution observed with the patient's weak eye is equal to the resolution observed with the patient's strong eye.

U.S. Patent No. 4,896,959 to O'Brien discloses an apparatus for treatment of amblyopia and similar eye conditions through use of a solitary visual target maintained at a level of minimal discernable size. The improved apparatus provides instantaneous electronic switching between targets of different acuity demand levels, compact optics requiring limited case size and automatic scoring of correct responses.

U.S. Patent No. 4,726,672 to O'Brien et al. discloses an exercise device for improving poor visual acuity in which a subject must identify randomly chosen figures of minimal visual stimulus projected in a darkened chamber. Earphones are provided to aid in the isolation of the subject and provide audio feedback. The device provides effective treatment for certain eye conditions involving poor acuity and is particularly effective in treating the eye condition known as amblyopia.

U.S. Patent No. 4,134,401 to Galician discloses an eye-patching method and device used in medical care of a person's eye for varying indications such as post operative patching, treatment of corneal injury, non-surgical tarsorrhaphy, exposure keratitis, situations where patient removing and reapplying of the patch independently is desired, and in occlusion therapy in amblyopia, peeking through the patch being impossible, the method of use of one or more of several combinations are desirable, there being a narrow adhesive strip of length to bind-over a major part of the closed upper and lower lids, and an elongated absorbent material impregnated preferably with medicament, for aligning along and over the eye-slit of the closed upper and lower eyelids, and a gauze sponge, and a tape element having a predetermined size in area sufficient to substantially cover upper and lower eyelids in a closed state and having a bottom adhesive surface adapted to fasten the tape element to skin surfaces of the upper and lower eyelids when in a closed state, for the placing thereof over one or more of the adhesively attached adhesive strip at least with or without other noted elements.

U.S. Patent No. 4,057,054 to Glannone discloses an eye treatment apparatus comprising a frame resembling a pair of eye glasses and including a lamp adjustably located within each of two eye piece areas. The lamps may each be adjusted in three directions and are powered by an intermittent source of electrical energy helpful in the treatment of strabismus, amblyopia, suppression and the restoration of normal binocular function.

U.S. Patent Application No. US 2003/0208265 A1 discloses a supplemental endo capsular lens and the method of inserting and embedding the lens within either a gel or polymer, inside the capsule of the crystalline lens, during phaco-ersatz or similar surgical procedures in order to supplement the refractive power of the eye with a view to correcting ametropia while maintaining a useable amplitude of accommodation.

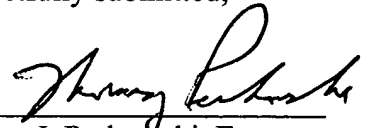
U.S. Patent Application No. US 2003/0214630 A1 discloses an interactive occlusion system, including software and hardware, for the treatment of amblyopia using virtual reality or other physically interactive or perceptually immersive three-dimensional or two-dimensional computer generated simulations, in which the patient's occlusion compliance and usage time during occlusive and non-occlusive periods can be precisely recorded and the patient's visual acuity can be accurately measured to be provided to the clinician, as well as the capacity for entering prescriptions and treatment plans for individual patients and restricting individual access to that patient's prescription and treatment plan while allowing non-occlusive operation of the system after the prescribed occlusion time or for non-patient users.

Chapter 3 in Vision, entitled "Stereopsis" discloses fundamental assumptions and computational theory for stereopsis in the human vision system, including algorithms for measuring stereo disparity and stereo-matching.

A separate listing of the above references on PTO Form 1449 and a copy of these references are enclosed herewith for the convenience of the Examiner.

The Commissioner is also hereby authorized to charge any fee deficiencies or overpayments to Deposit Account No. 16-1340.

Respectfully submitted,



Thomas J. Perkowski, Esq.  
Reg. No. 33,134  
Attorney for Applicant  
Thomas J. Perkowski, Esq., P.C.  
Soundview Plaza  
1266 East Main Street  
Stamford, Connecticut 06902  
203-357-1950  
<http://www.tjpatlaw.com>

Dated: September 29, 2005

CERTIFICATE OF EXPRESS MAIL  
UNDER 37 C.F.R. 1.10

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Substitute for form 1449A/PTO

**INFORMATION  
DISCLOSURE STATEMENT  
BY APPLICANT**

Sheet

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of

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**Complete If Known**

Application Number	10/613,987
Filing Date	July 4, 2003
First Name Inventor	Robert Spector
Group Art Unit	3737
Examiner Name	John R. Sanders, Jr.
Attorney Docket Number	143-001USA000

**U.S. PATENT DOCUMENTS**

Examiner Initials	Cite No.	U.S. Patent Documents		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Intn'l Class / Sub Class
		Number	Kind Code (if known)			
		6,540,900 B2		Nolan	4/1/2003	A61K 31/74
		6,273,092 B1		Nolan	8/14/2001	A61B 19/00
		6,149,615		Gallamore	11/21/2000	A61F 13/12
		6,149,615		Gallamore	11/21/2000	A61F 13/12
		5,956,126		Cody	9/21/1999	A61B 3/00
		4,896,959		O'Brien	1/30/1990	G61B 3/00
		4,726,672		O'Brien et al.	2/23/1988	A61B 3/00
		4,134,401		Galician	1/16/79	A61F 13/12
		4,057,054		Giannone	11/8/1977	A61H 5/00
		2003/0208265 A1		Ho et al.	11/6/2003	A61F 2/14
		2003/0214630 A1		Winterbotham	11/20/2003	A61B 3/00

PUBLICATIONS		
Examiner Initials	Cite No.	Description
		MARR, D., Vision: A Computation Investigation into the Human Representation and Processing of Visual Information, 1982, pages viii, ix, 111-161, W.H. Freeman and Company, New York.
		Search Report for International Application No. PCT/US04/21590

**EXAMINER**

**DATE CONSIDERED**

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**EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance not considered. Include copy of this form with next communication to applicant.**

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**(INFORMATION DISCLOSURE STATEMENT – SECTION 9 PTO-1449)**